

REMARKS

Claim 1 has been amended to clarify the claimed invention and the subject matter of Claims 2, 3, 5, 6 and 11 are incorporated. Further new limitations for the one component epoxy have been added. Claim 2 has been amended to limit the silane coupling agent as the adherence imparting agent. Claim 3 has been amended to limit 1,6 dyhydroxynaphthalene diglycidyl ether as the bifunctional epoxy compound. Claim 4 has been amended to set a content ratio of the dyhydroxynaphthalene diglycidyl ether. Claim 5 has been amended to set limitations to the accelerator. Claim 6 has been amended to set a limitation to the amount of the cyclic acid anhydride. Claim 8 has been amended to set a limitation to the selection of the silane coupling. Claims 9 and 10 have been amended to clarify the claimed invention and to correct clerical error. Claim 12 has been amended to set a limitation to the multifunctional epoxy compound. Claim 13 has been amended to set a limitation to the bifunctional epoxy compound. Claims 7 and 11 have been canceled. Claims 14 and 15 have been added.

Supports for the amendments to Claim 1 can be found in Claims 2, 3, 5, 6, and 11 as previously presented and in the specification (page 12, line 2 page 19, line 8 and page 15 line 9), for example. Support for the amendment to Claim 2 can be found in the specification. (page 6 line 18) Support for the amendment to Claim 3 can be found in the specification. (page 18 line 23) Support for the amendment to Claim 4 can be found in the specification. (page 33 line 25) Support for the amendment to Claim 5 can be found in the specification. (page 16 line 23) Support for the amendment to Claim 6 can be found in the specification. (page 15 line 25) Support for the amendment to Claim 8 can be found in the specification. (page 13 line 25) Support for the amendment to Claim 12 can be found in the specification. (page 17 line 12) Support for the amendment to Claim 13 can be found in the specification. (page 18 line 12) Support for the Claim 14 can be found in the specification. (page 17 line 12), and Support for the Claim 15 can be found in the specification. (page 19 line 17-23)

No new matter has been added. Applicant respectfully request entry of the amendments and following remarks.

Claim Objections

Claim 10-12 have been objected due to informalities. Claim 10 has been amended as suggested by the Examiner. Claim 11 has been canceled in view of the coverage afforded by the remaining claims. Applicant respectfully requests withdrawal of the objection.

Claim Rejections – 35 USC §112

Claims 1-13 have been rejected under 35 U.S.C 112 as being indefinite. The terms “like” and “type” in Claim 1 have been changed to “form”, and deleted in Claims 6 and 12.

The word “only” in Claim 1 has been deleted and “consisting essentially of” is used instead of “comprising”.

The words in parentheses in line 19 Claim 1 has been removed and re-written and the word “cross-link chains” has been changed to “bridge-chains”.

As for the insufficient antecedent basis for the limitation “bifunctional epoxy compound” in Claim 4, since Claim 3 has been incorporated with Claim 1, it now has a proper antecedent.

Applicant respectfully requests withdrawal of the rejections.

Claim Rejection – 35 USC §103

Claims 1, 3-7, and 9-12 have been rejected under 35 U.S.C. 103 as being unpatentable over DiSalvo et al and Pham et al.

Pham is an article teaching several types of epoxy resins and curing agents while, DiSalvo teaches a polyimide-modified epoxy adhesive composition that comprises:

- (a) an epoxy resin,
- (b) a soluble polyimide resin , and
- (c) a reactive monoepoxy diluents to dissolve the soluble polyimide resin into the epoxy resin,

wherein the soluble polyimide resin comprising from about 0.01% to about 20% by weight of epoxy, polyimide, and diluents.

In addition, the most characteristic feature of the polyimide-modified epoxy adhesive composition disclosed by DiSalvo is that the composition does not contain an unreactive solvent,

but instead the reactive monoepoxy diluents is used for dissolution of the polyimide into the epoxy resin.

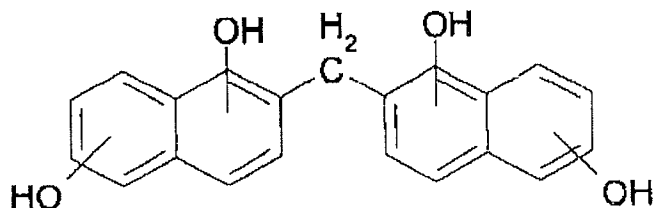
Accordingly, DiSalvo fails to teach such an epoxy adhesive composition that does not comprise any soluble polyimide resin or any reactive monoepoxy diluent, but contains an unreactive solvent component.

In contrast, the conductive adhesive as claimed in any of the currently amended claims 1-6, 8-10, 12-15 comprises a diluting unreactive solvent but does not comprises any reactive monoepoxy diluents or any soluble polyimide resin.

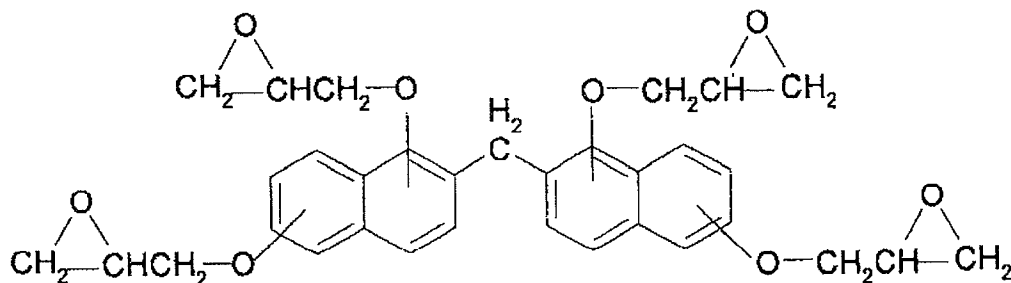
The cited references can never suggest such an epoxy adhesive composition that does not comprises any reactive monoepoxy diluents or nay soluble polyimide resin.

Indeed, as use of reactive monoepoxy diluents and soluble polyimide resin is an essential feature of the epoxy adhesive composition disclosed in DiSalvo, and the reference can never teach any motivation for propagating any epoxy adhesive composition without any use of reactive monoepoxy diluents and soluble polyimide resin.

Further, as bis(2-dihydroxynaphtyl)methane is presented by the following formula:

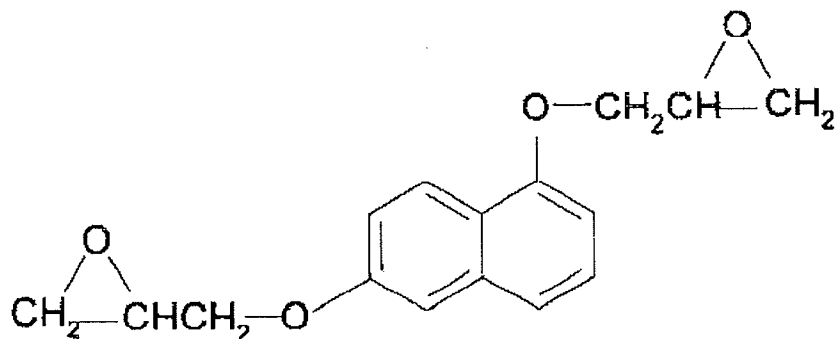


The epoxy resin glycidyl polyether of bis(2-dihydroxynaphtyl)methane may be presented by the following formula:



Therefore, the epoxy resin glycidyl polyether of bis(2-dihydroxynaphtyl)methane disclosed in Disalvo is by no menas a bifunctional epoxy compound containing a naphthalene skeleton.

At least, DiSalvo fails to teach a dihydroxynaphthalene diglycidyl ether, such as 1,6-dihydroxynaphthalene diglycidyl ether of the following formula:



In view of these facts, the currently amended Claim1 and Claims 3-6, 9-12 are by no means prima facie obvious over DiSalvo in view of Pham et al.

Claims 2, 8, and 13 have been rejected under 35 U.S.C. 103 as being unpatentable over DiSalvo et al, Pham et al and Kuboki et al.

Kuboki teaches such an epoxy adhesive composition that is blended with known additives such as inorganic fillers and surface treatment agents of fillers such as silane coupling agents.

Examples of the inorganic fillers disclosed in Kuboki include only one metallic filler and numbers of non-metallic fillers. The metallic filler exemplified therein is aluminum powder. Therefore, Kuboki fails to provide any good suggestion that silane coupling agents will be used as surface treatment agents of other metal powder that aluminum powder. At least Kuboki fails to provide any good suggestion that silane coupling agents will be used as surface treatment agents of silver powder as well as aluminum powder.

In particular, it is well known that a silane coupling agent binds on the surface of inorganic material through such a reaction between Si-O-R and hydroxyl groups present on the surface: $\text{Si-O-R} + \text{HO-M} \rightarrow \text{Si-O-M} + \text{ROH}$. Kuboki fails to provide any good evidence indicating that silver powder would have such a hydroxyl group (HO-Ag) on its surface in a manner similar to the hydroxyl group HO-Al being present on the surface oxide layer of the Al powder described therein.

Accordingly, the currently amended Claims 2, 8 and 18 are by no means prima facie obvious over the cited references.

Applicant respectfully requests withdrawal of the rejections.

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CONCLUSION

In the light of the applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

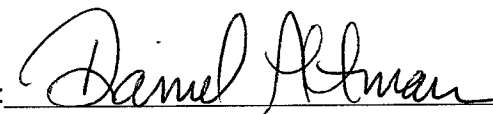
Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By:



Daniel E. Altman
Registration No. 34,115
Attorney of Record
Customer No. 20,995
(949) 760-0404